In the Claims

    This listing of claims will replace all prior versions and listings of claims in the application:

1   1.   (Previously Amended) A data transfer apparatus
2 transferring data from a data source to a data destination
3 comprising:
4   a first-in-first-out buffer memory having an input connected
5 to the data source, an output connected to said data destination
6 and a predetermined number of data entries;
7   a master queue counter storing a master count indicative of a
8 number of data entries available for data storage within said
9 first-in-first-out buffer memory, said master queue counter
10 connected to the data source to decrement said master count upon
11 allocation of data at said data source to be stored in said first-
12 in-first-out buffer memory;
13   a remote queue counter storing a remote count indicative of a
14 number of data entries within said first-in-first-out buffer memory
15 currently storing data, said remote queue counter connected to said
16 data source for incrementing said remote count upon allocation of
17 data at said data source to be stored in said first-in-first-out
18 buffer memory, said remote queue counter connected to said data
19 destination for decrementing said remote count and generating a
20 decrement confirmation signal upon transfer of data out of said
21 first-in-first-out buffer memory to said data destination; and
22   wherein said master queue counter is further connected to said
23 remote queue counter for incrementing said master count upon
24 receipt of said decrement confirmation signal.

1   2.   (Original) The data transfer apparatus of claim 1,
2 wherein:

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3   said master queue counter is initialized to said predetermined

4   number of data entries of said first-in-first-out buffer memory;

5.   and

6   said remote queue counter is initialized at zero.

1   3.   (Original) The data transfer apparatus of claim 1,

2   wherein:

3   said data source may allocate data to said first-in-first-out

4   buffer memory only if said master queue counter indicates a non-

5   zero number of data entries available for data storage within said

6   first-in-first-out buffer memory; and

7   said data destination reads said first-in-first-out buffer

8   memory only if said remote queue counter is non-zero.

1   4.   (Currently Amended) The data transfer apparatus of claim

2   1, wherein:

3   said data source may selectively annul allocation of data of

4   said data source to be stored in said first-in-first-out buffer

5   memory for data allocated but whose transmission is annulled, said

6   data source generating an annul increment signal upon annulling

7   data; and

8   said master queue counter is further connected to said data

9   source to increment said master count upon receipt of said annul

10   increment signal.

1   5.   (Original) A method of transferring data from a data

2   source to a data destination comprising the steps of:

3   maintaining a master count indicative of a number of data

4   entries available for data storage within a first-in-first-out

5   buffer memory;

6   allocating data from the data source to the first-in-first-out

7   buffer memory only when the master count is non-zero;

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8   decrementing the master count upon allocation of data at the
9 data source to be stored in the first-in-first-out buffer memory;
10   maintaining a remote count indicative of a number of data
11 entries within the first-in-first-out buffer memory currently
12 storing data;
13   incrementing the remote count upon allocation of data at said
14 data source to be stored in said first-in-first-out buffer memory;
15   transferring data from the first-in-first-out buffer memory to
16 the data destination only if the remote count is non-zero;
17   decrementing the remote count upon transfer of data out of the
18 first-in-first-out buffer memory to the data destination;
19   incrementing the master count upon confirmation of
20 decrementing of the remote count.

1   6.   (Previously Amended) The method of transferring data of
2 claim 5, further comprising the steps of:
3   initializing the master count to the number of data entries of
4 the first-in-first-out buffer memory; and
5   initializing the remote count to zero.

1   7.   (Currently Amended) The method of transferring data of
2 claim 5, wherein:
3   selectively annulling allocation of data of the data source to
4 be stored in the first-in-first-out buffer memory for data
5 allocated but whose transmission is annulled; and
6   incrementing the master count upon annulling allocation of
7 data.

1   8.   (Previously Added) A data transfer apparatus transferring
2 data from a data source to a data destination in a plurality of
3 pipeline stages comprising:

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4   a first-in-first-out buffer memory having an input connected

5   to the data source, an output connected to said data destination

6   and a predetermined number of data entries;

7   a master queue counter storing a master count indicative of a

8   number of data entries available for data storage within said

9   first-in-first-out buffer memory, said master queue counter

10 connected to the data source to decrement said master count upon

11 allocation of data at said data source to be stored in said first-

12 in-first-out buffer memory during a first pipeline stage;

13   a remote queue counter storing a remote count indicative of a

14 number of data entries within said first-in-first-out buffer memory

15 currently storing data, said remote queue counter connected to said

16 data source for incrementing said remote count upon allocation of

17 data at said data source to be stored in said first-in-first-out

18 buffer memory during a second pipeline stage after said first

19 pipeline stage, said remote queue counter connected to said data

20 destination for decrementing said remote count and generating a

21 decrement confirmation signal upon transfer of data out of said

22 first-in-first-out buffer memory to said data destination during a

23 third pipeline stage after said second pipeline stage; and

24   wherein said master queue counter is further connected to said

25 remote queue counter for incrementing said master count upon

26 receipt of said decrement confirmation signal during a fourth

27 pipeline stage after said third pipeline stage.

1   9.   (Previously Added) The data transfer apparatus of claim 8,

2   wherein:

3   said master queue counter is initialized to said predetermined

4   number of data entries of said first-in-first-out buffer memory;

5   and

6   said remote queue counter is initialized at zero.

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1   10. (Previously Added) The data transfer apparatus of claim
2   8, wherein:
3   said data source may allocate data to said first-in-first-out
4   buffer memory during said first pipeline stage only if said master
5   queue counter indicates a non-zero number of data entries available
6   for data storage within said first-in-first-out buffer memory; and
7   said data destination reads said first-in-first-out buffer
8   memory during said third pipeline stage only if said remote queue
9   counter is non-zero.

1   11. (Previously Added) The data transfer apparatus of claim
2   8, wherein:
3   said data source may selectively annul allocation of data of
4   said data source to be stored in said first-in-first-out buffer
5   memory during a fourth pipeline stage after said first pipeline
6   stage and before said second pipeline stage, said data source
7   generating an annul increment signal upon annulling data; and
8   said master queue counter is further connected to said data
9   source to increment said master count upon receipt of said annul
10 increment signal during a fifth pipeline stage after said fourth
11 pipeline stage.

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